U.S. Coral Reef Monitoring Project Survey

Part 1. Project Summary

Survey administered by: ASCH
Project ID:
Date Administered (dd-mo-yy): 17-Aug-99

Project title: Long Term Dynamics of Shallow Coral Reefs in St. John, USVI

Principal investigators

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Keywords (provide several keywords that describe project data):

CORAL COVER
COMMUNITY STRUCUTRE
SHALLOW
PATTERNS
PROCESSES
RECRUITMENT
MONITORING

Project Summary:

The goal of this project is to quantify the long term dynamics of shallow coral reef communities (i.e., record patterns) and to address processes (i.e., hypotheses) that might explain the patterns. Coral recruitment currently is being studied as a key process.

Spatial Coverage of Database

Spatial Coverage (briefly describe geographic extent of project):

South coast of St. John between Devers Bay and Ram Head (most work between White Point and Cabritte Point). Max depth 21m.

Geographic Extent (Bounding rectangle in decimal degrees);
North_____West_____South_____East_____

Are data aggregated into geographic units: [x] yes [ ] no
Are data available in disaggregated form: [ ] yes [ ] no

How was spatial accuracy determined:
[ ] NOAA Nautical Chart [ ] USGS Quad [ ] Loran [ ] County Road Map
[ ] Survey [x] GPS [x] Other: NPS Map

Temporal Characteristics of Database

Temporal characteristics (brief narrative):

1987-1999, approximately annual

Period of Record:
Begin (d/mo/yr): 1987 End (d/mo/yr): Summer 1999

Sampling is: [X] Ongoing [ ] Planned [ ] Historic

Frequency of Sampling:
[ ] Hourly [ ] Daily [ ]Weekly [ ] Monthly [x] Annually [ ] Other_____

Sampling Interval:
[x] Fixed [ ] Intermittent

How is sampling recorded?
[ ] Automated [x] Non-automated

Data Parameters:

Specific Constituents/Parameters Sampled (include units):

PERCENT COVER (CORALS, ALGAE, SAND, INVERTEBRATES, ETC.)
COUNTS OF JUVENILE CORALS
GROWTH OF JUVENILES (MILIMETERS/YR)
MORTALITY OF JUVENILE CORALS

Methodology:

Provide a short description about how monitoring data is gathered/acquired:

1. Photo transects completed with Nikonos V
2. Censusing small coral in situ using 5x5 quadrats.
3. Tagging juvenile corals with aluminum tags to record their growth and survival

On what basis were sites selected?

Selection method varies for each site. Among the methods utilized are the following:
1. Haphazard (i.e., random without the use of random numbers)
2. Random
3. Selected by specific features.

How are samples processed, stored, and archived in the field?

Photographs in the field

How are samples processed, stored, and archived in the laboratory?

Field slides

What methods were used for sample analysis and quality assurance?

Photographs are analyzed for percent cover by random dots.

[x] Data quality analysis

Standard statistical analyses of power, etc.

[ ] Chemical analysis

Describe any assumptions in assembling/acquiring monitoring data:

There is an assumption that study sites are representative of the study population.

Describe the primary limitations with monitoring data:

It is not possible to detect changes occurring on a time scale less than the sampling interval. There are also difficulties involved in identifying the processes that explain the patterns observed in monitoring

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Database Characteristics:

Format:

[x] Digital [ ] Map
[x] Hardcopy (reports, data sheets, tables) [ ]Other_____

Status (check one):

[ ] Database Available/Being Distributed [x] Portions of Database Available
[x] Data Not Available [ ]Other_____

Predominant Data Type:

[x] Numeric [ ] Qualitative

How is data stored (hardware & software):

Macintosh/Excel

Data Structure:

[x] Discrete Points (sampling site) [x] Line/transect (e.g., shoreline, beach)
[ ] Polygon (watershed)

Data Completeness (check one):

[ ] Data clean [x] Data need minor work [ ] Data need major work [ ] Other_____

Data Maintenance (check one):

[ ] No maintenance [x] Intermittent maintenance [ ]Periodic maintenance (fixed intervals)
[ ] Continuous maintenance [ ] Other_____

Are the following elements in this database available for each sampling location (check all that apply)?

[x] Station Location (lat/long coordinates of site or areal unit)
[x] Frequency of Sampling (by station location)
[x] Constituents/Parameters Sampled (by station location)
[x] Period of Record (by station location)

Use and Users:

How is data used?

[x] Research

[x] Monitoring

[ ] Planning

[ ] Management

[ ] Regulatory

Users (identify specific institutions):

[x] Federal Government: NPS

[ ] State Government

[ ] Local Government

[ ] Regional Entities

[x] Academic: California State University-Northridge

Data Availability:

On-line (describe how to access, i.e., bbs, Telnet, world wide web):

Off-line: (describe how to access):

Are costs associated with requests? [ ] yes [ ] no
If yes, please explain:

Access constraints (describe briefly any constraints for accessing data set):

Use constraints (describe briefly any constraints for using data set):

Based upon the data gathered at these sampling sites, Dr. Edmunds has published a variety of research papers on other aspects of coral reef health and habitat. Since this survey does not enumerate all the areas in which he has done research, we have included a partial bibliography of his works on U.S. Virgin Islands coral reefs.

Edmunds, P.J. 1991. Extent and effects of blakc band disease on a Caribbean reef. Coral Reefs 10L 161-165.

Edmunds, P.J., R.B. Aronson, W.F. Precht, D.W. Swanson, D.R. Levitan. 1994. Large scale, long-term monitoring of Caribbean coral reefs: simple, quick, inexpensive techniques. Atoll Research Bulletin 421: 1-19

Edmunds, P.J., R.B. Aronson, D.W. Swanson, D.R. Levitan, and W.J. Precht. 1998. Photographic versus visual census techniques for the quantification of juvenile corals. Bull. Mar. Sci. 62: 937-946.

Edmunds P.J., Bruno J.F. In press. The importance of sampling sclae in ecology: kilometer-wide variation in coral reef communities. Mar. Ecol. Prog. Series

Edmunds P.J. Witman D.J. 1991. Effect of Hurricane Hugo on the primary framework of a reef along the south shore of St. John, US Virgin Islands. Mar. Ecol. Prog. Ser. 78: 201-204.